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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,033

10/24/2003

Jukka Henriksson

886A.0005.U1(US)

1753

29683 7590 07/03/2007  
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EXAMINER

BAYARD, EMMANUEL

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

07/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/693,033

Applicant(s)

HENRIKSSON, JUKKA

Examiner

Emmanuel Bayard

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This is in response to communication filed on 4/16/07 in which claims 1-8 and 10-27 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection therefore this case is made final.

#### ***Claim Objections***

1. Claims 26 and 28 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. They both depend on claims 11 and 17 and recite the same limitations of claims 25 and 27, which also depend on claims 11 and 17.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-8 and 10-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Stopler et al U.S. Pub No 20030043925 A1 in view of Sutterlin et al U.S. patent No 5,463,662.

As per claims 1 and 17, Stopler et al teaches a method for receiving a multi-carrier signal, comprising the steps of: detecting a presence of at least one impulse

Art Unit: 2611

interference within the signal, identifying one or more samples of said signal where a significant amount of the impulse noise caused by the at least one impulse interference is present (see figs. 1-2 elements 12, 14 and page 2, paragraph [0016] and page 3 [0029]-[0030]); selecting samples to be blanked (see fig.1 element 16 and page 3 [0031]); blanking the selected samples to obtain a signal with blanking (see fig.1 element 18 and page 3 [0032] and page 6 [0074-0077]); and determining an estimate of the signal with blanking (see figs. 1-2 elements 20 100 and page 3 [0032]); wherein the selected samples comprise the samples identified to have impulse interference present and at least one of the following: a first predetermined number of samples preceding the identified samples (see figs.1- element 68); and a second predetermined number of samples following the identified samples (see fig.1 element 72 and page 7 [0077]-[0078]).

However Stopler does not teach by applying a blanking window to said signal wherein the blanking window is linear and square waves are functionally equivalent to the claimed (non-rectangular) to provide smooth transitions at its end.

Sutterlin et al teaches applying a blanking window to said signal wherein the blanking window is non-rectangular to provide smooth transitions at its end (see figs.1 and 3 elements 24 and 27 and col.3, lines 45-67 and col.4, lines 1-5 and col.6, lines 1-40 and col.7, lines 25-35).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Suterlin into Stopler as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 2, Stopler et al and Sutterlin in combination would teach wherein the first predetermined number of samples is equal to the second predetermined number as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claims 3 and 18, Stopler et al teaches further comprising: defining a blanking window having a length selected from a plurality of different predetermined lengths and applying the blanking window to the signal so that one or more samples within the blanking window are blanked (see [0077]).

As per claim 4, Stopler et al and Sutterlin in combination would teach wherein the number of blanking windows is one and the predetermined length of the window is equal to or greater than three samples in the time domain as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claims 5 and 19, Stopler et al and Sutterlin in combination would teach wherein the selected length of the blanking window is the smallest one of the available lengths that is sufficient to encompass the selected samples as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claims 6 and 20, Stopler et al and Sutterlin in combination would teach wherein the selected blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the blanking window as to snub the noise pulse from the average or prevent it from building

up the average as taught by Suterlin (see col.7, lines 40-45).

As per claims 7 and 21, Stopler et al and Sutterlin in combination would teach wherein a plurality of instances of the defined blanking window is applied in succession over the samples so that a first blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the said first blanking window and at least one second blanking window is positioned so as to include at least one sample immediately succeeding the samples within the first blanking window, wherein all the identified samples are within at least one of the first and second blanking windows as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 8, Stopler et al Inherently teaches, wherein two or more blanking windows are positioned so as to overlap as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 10, Stopler et al and Sutterlin in combination would teach a computer program comprising program instructions for causing an apparatus to perform the method of claim 1 as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 11, Stopler et al teaches: a receiver for receiving a multi-carrier signal (see figs. 1-2 and page 3 [0029]); and a processor (see fig.1 element 8); wherein the processor is configured to: detect the presence of impulse interference in said signal; identify one or more samples of said signal where a significant amount of impulse noise is present (see figs. 1-2 elements 12, 14 and page 2, paragraph [0016]

and page 3 [0029]-[0030]); select samples of said signal to be blanked (see fig.1 element 16 and page 3 [0031]); the selected samples including the identified samples and at least one of a first predetermined number of samples preceding the identified samples (see figs.1- element 68); and a second predetermined number of samples following the identified samples (see fig.1 element 72 and page 7 [0077]-[0078]); blank the selected samples to obtain a signal with blanking (see fig.1 element 18 and page 3 [0032] and page 6 [0074-0077]); and determine an estimate of the signal with blanking (see figs. 1-2 elements 20 100 and page 3 [0032]).

However Stopler does not teach by applying a blanking window to said signal wherein the blanking window is linear and square waves are functionally equivalent to the claimed (non-rectangular) to provide smooth transitions at its end.

Sutterlin et al teaches applying a blanking window to said signal wherein the blanking window is non-rectangular to provide smooth transitions at its end (see figs.1 and 3 elements 24 and 27 and col.3, lines 45-67 and col.4, lines 1-5 and col.6, lines 1-40 and col.7, lines 25-35).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Suterlin into Stopler as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 12, Stopler et al teaches a blanking window having a length selected from a plurality of different predetermined lengths and applying the blanking window to the signal so that one or more samples within the blanking window are blanked (see [0077]).

As per claim 13, Stopler et al and Sutterlin in combination would teach, configured to select the smallest one of the predetermined lengths that is sufficient to encompass the selected samples as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 14, Stopler et al and Sutterlin in combination would teach, configured to position the selected blanking window in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the blanking window as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 5, Stopler et al and Sutterlin in combination would teach configured to apply a plurality of instances of the defined blanking window in succession over the samples so that a first blanking window is positioned in relation to the samples in the time domain so that at least one sample preceding the identified samples is within the said first blanking window and at least one second blanking window is positioned so as to include at least one sample immediately succeeding the samples within the first blanking window, wherein all the identified samples are within at least one of the first and second blanking windows as to snub the noise pulse from the average or prevent it from building up the average as taught by Suterlin (see col.7, lines 40-45).

As per claim 16 and 22, Stopler et al teaches a communication system comprising a transmitter for transmitting a multi-carrier signal and an apparatus according to claim 10 for receiving said signal (see [0002]).



As per claims 23 Stopler, teaches wherein said soft (smooth transitions) are linear transitions (see fig.1 element 27 and col.7, lines 25-67).

As per claims 24-28, Stopler teaches a method according to claim 1, wherein said smooth transitions are cosine transitions (see fig.1 element 19 and col.36-37).

***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272

Art Unit: 2611

3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)

Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571 272 3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/26/2007

Emmanuel Bayard

Primary Examiner

Art Unit 2611

**EMMANUEL BAYARD**

**PRIMARY EXAMINER**